1. Simplify the following expressions

   (a) $2^3 \cdot 2^{-3}$

   (b) $\left(\dfrac{4}{9}\right)^{3/2}$

   (c) $\sqrt[3]{24}\,\sqrt[3]{9}$

   (d) $\left(\dfrac{1}{81}\right)^{-1/4}$

   (e) $3\sqrt{18} - 7\sqrt{50}$

   (f) $\dfrac{3^{-4} + 9^{-2}}{27^{-1}}$

2. The S&P 500 Index has an average annual rate of return of 7.96% since 1957.

   (a) If you invest $1000 now and the fund achieves its average rate every year, what will your balance be in 3 years? In 15?

   (b) What if the rate of return is 10.25%?

   (c) What if the rate is 17.68%?